



Name: _____ #: _____

Date: _____

Section: _____ HR: _____

Chapter 4 Section 1 Study Guide: Properties of Minerals

Pg. 119	Mineral Definition:	<ul style="list-style-type: none"> • A mineral is a naturally occurring, inorganic solid that has crystal structure and a definite chemical composition • Geologists have identified over 3,000 minerals, but only about 100 are common • About 20 minerals make up most of the earth's crust, rock-forming minerals
Pg. 120	5 characteristics of a mineral:	<ol style="list-style-type: none"> 1. Naturally occurring <ul style="list-style-type: none"> • To be classified as a mineral, a substance must be formed naturally • Materials that are man made like construction materials are not natural so they are not considered a mineral <ul style="list-style-type: none"> ○ Even if they are made of materials that make up Earth's Crust 2. Inorganic <hr/> <ul style="list-style-type: none"> • Minerals can not come from living things • Coal is not considered a mineral because though it comes from Earth's crust, it forms from plant and animal remains 3. solid <ul style="list-style-type: none"> • Has a definite volume and shape • The particles are packed tightly together and do not move more freely like a liquid

		<p>4. Crystal Structure</p> <hr/> <ul style="list-style-type: none"> • The particles are solid and line up in a pattern that repeats over and over again • In some minerals the crystals are clearly visible • In other minerals the crystal pattern can only be seen under a microscope <p>5. Definite chemical composition</p> <ul style="list-style-type: none"> • A mineral always contains certain elements in certain proportions. • An element is a substance that is composed of a single kind of atom • A compound is two or more elements combined where the elements no longer have distinct properties
Pg. 121	Properties of a Mineral	<p>1. Hardness</p> <ul style="list-style-type: none"> • One of the best clues to identify a mineral <p>Mohs hardness scale:</p> <ul style="list-style-type: none"> • A scale that ranks ten minerals from softness to hardness • A mineral can scratch any other mineral that is softer than itself • If a mineral is not on the scale, a mineral on the scale is used to scratch the unknown mineral

2. Color

- Color can be used to identify only those few minerals that always have their own characteristic color

3. Streak

- The streak of a mineral is the color of its powder
- The streak of a mineral can be observed by rubbing the mineral on a unglazed tile
- The color of a mineral may vary, but its streak does not

4. Luster

- Describes how a mineral reflects light from its surface
- Minerals that contain metal or a glassy finish have luster
- Other terms used are earthy, waxy, and pearly

5. Density

- Each mineral has a characteristic density, meaning it does not change for that substance
- A mineral's density can be determined by the water displacement method

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6. Crystal Shape

- Minerals are classified into six groups depending on the number and angle of the crystal faces

7. Cleavage & Fracture

- The way a mineral breaks apart can help to identify it
- Cleavage characterizes a mineral that breaks evenly
- Fracture describes a mineral that breaks in a unusual way

8. Special Properties

- Magnetism
- Fluorescence
- Radioactive
- Electrical

fluorescence:

- Minerals that glow under ultraviolet light

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